

Commonwealth of Kentucky
Division for Air Quality
PERMIT APPLICATION SUMMARY FORM

Completed by: Philip T. Jarboe

GENERAL INFORMATION:

Name:	Westlake Vinyls Inc. – PVC Plant
Address:	230 Johnson Riley Road
Date application received:	5/8/2019
SIC Code/SIC description:	2821, Plastics Material and Resin Manufacturing
Source ID:	21-157-00040
Agency Interest:	2967
Activity:	APE20190005, APE20190006, APE20190009
Permit:	V-15-009 R4

APPLICATION TYPE/PERMIT ACTIVITY:

<input type="checkbox"/> Initial issuance	<input type="checkbox"/> General permit
<input type="checkbox"/> Permit modification	<input type="checkbox"/> Conditional major
___Administrative	<input checked="" type="checkbox"/> Title V
x Minor	<input type="checkbox"/> Synthetic minor
x Significant	<input type="checkbox"/> Operating
<input type="checkbox"/> Permit renewal	<input checked="" type="checkbox"/> Construction/operating

COMPLIANCE SUMMARY:

<input type="checkbox"/> Source is out of compliance	<input type="checkbox"/> Compliance schedule included
<input checked="" type="checkbox"/> Compliance certification signed	

SOURCE APPLICABLE REQUIREMENTS LIST:

<input type="checkbox"/> NSR	<input checked="" type="checkbox"/> NSPS	<input checked="" type="checkbox"/> SIP
___ Non-Attainment	<input checked="" type="checkbox"/> NESHAPS	<input type="checkbox"/> Other
x PSD	<input checked="" type="checkbox"/> CAM	
x Netted out of PSD/NSR for NO _x		
___ Not major modification per 401 KAR 51:001, 1(114)(b)		

MISCELLANEOUS:

- ☐ Acid rain source
- ☐ Source subject to 112(r)
- ☐ Source applied for federally enforceable emissions cap
- ☐ Source provided terms for alternative operating scenarios
- ☒ Source subject to a MACT standard
- ☐ Source requested case-by-case 112(g) or (j) determination
- ☐ Application proposes new control technology
- ☒ Certified by responsible official
- ☐ Diagrams or drawings included
- ☐ Confidential business information (CBI) submitted in application
- ☐ Pollution Prevention Measures
- ☐ Area is non-attainment (list pollutants):

EMISSIONS SUMMARY:

Pollutant	Actual* (tpy)	Potential V-15-009 R4 (tpy)
PM/PM ₁₀ / PM _{2.5}	15.5/15.5/15.2	45.82/11.12/9.03
SO ₂	0.326	0.60
NO _x	23.4	62.87
CO	46.7	108.96
VOC	53.9	99.34
Hazardous Air Pollutants (HAPS)		
HCl	0.113	0.753
Formaldehyde	0.0004	0.008
Methanol	0.946	0.095
Vinyl chloride	15.5	29.90
Source wide HAPs or Combined HAPs		30.76
Green House Gases		
Nitrous Oxide	0.07	0.284
Carbon dioxide (CO ₂)	34739.4	122,811
Methane	0.67	2.55
CO ₂ Equivalent	34,777.0	122,959

*Based on 2018 KY Emission Inventory Survey Data

SOURCE DESCRIPTION:

The Westlake Vinyls, Inc. – PVC Plant is a synthetic organic chemical manufacturing industry (SOCMI) source falling under SIC Group 28. Polyvinyl chloride (PVC) is produced at this facility by polymerization of vinyl chloride monomer in batch reactors. Following polymerization, the polyvinyl chloride slurry is sent to steam stripping columns to separate the polyvinyl chloride from unreacted vinyl chloride monomer which is recycled back into the process. The gas stream from the recovery system is vented to the process vent incinerator. Following the stripping process, the resin is sent to the slurry bend tanks and dryer feed tanks. Next, the polyvinyl chloride resin is dried, screened and sent to PVC storage silos. Polyvinyl chloride is produced at this facility and the finished product is shipped by truck and rail transport.

Activity APE20190009 (Title V Minor Revision)

This application involves taking a limitation on the annual average firing rate on emission unit 21 (Rotary dryer #3). The firing rate will be reduced from 15 MMBtu/hr to 14 MMBtu/hr.

Permit: V-15-009 R4

Activity APE20190006 (Title V Minor Revision)

This project includes the construction of a 220,000 pound capacity silo (#14) to store dry off-spec PVC and a railcar loading spout to load the off-spec PVC into rail cars.

Activity APE20190005 (Significant Revision)

The application received on May 8, 2019 is for the increase in annual production of PVC from 1.7 billion pounds per year to 2.0 billion pounds per year. The application consists of changes at all the 3 Westlake facilities which are considered one single source for PSD applicability. The overall change in emissions required further review under 401 KAR 51:017, Prevention of Significant Deterioration (PSD) applicability. Best Achievable Control Technology (BACT) determinations were made for CO, PM, PM₁₀, PM_{2.5}, VOC and GHG. The project did not result in a net emission increase for NO_x over the significance emission rate threshold that will require further review under 401 KAR 51:017.

At Westlake Vinyls Inc. – PVC Plant, the project involves addition of one cooling tower and updates to equipment components, with upstream and downstream impacts. The increase in capacity is accomplished by modifications to existing equipment in the PVC Plant as well as implementation of many physical and operational changes to improve efficiency and yield to incrementally increase production rates. In addition, at the PVC facility, the project involves addition of a new cooling tower and increase in the number of equipment leak components as well as increase in capacity rating of the existing dryers.

EMISSIONS AND OPERATING CAPS DESCRIPTIONS:

As part of the significant revision application of May 2019, the facility has chosen to impose maximum hourly and annual heat rating for the following units: Emission unit 15 (Boiler #1); Emission unit 22 (Boiler #2); Emission unit 021 (Rotary dryer #3 with integral cyclone) and Emission unit 33 (Carrier Fluidized bed dryer with integral cyclone).

OPERATIONAL FLEXIBILITY:

None